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NEW RECORDS OF MYXOMYCETES FROM CALIFORNIA V.

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To date, 222 species of slime molds have been reported from California (Kowalski, 1970a; 1970b; 1972; Kowalski and Curtis, 1970). In this paper nine new records are discussed, bringing the total to 231. Thus, over 50% of the known species of slime molds (Martin and Alexopoulos, 1969) have been found in California. This seemingly high percentage is due to two factors: 1) California contains many varied habitats and thus species from different ecological niches and 2) Myxomycetes are generally cosmopolitan in distribution.

All collections listed have been deposited in the Herbarium of the University of California (UC). Nomenclature follows Martin and Alexopoulos (1969). Collection numbers are my own. This investigation was supported by the National Science Foundation grant GB-28653.

Liceaceae

Licea castanea G. Lister. Inner surface of decaying bark, Pine Creek Ranch, 24 miles north of Chico, Butte Co., *10963,* Dec. 12, 1969, *10981* and *10984,* Jan. 9, 1970; dead wood, Lower Bidwell Park, Chico, Butte Co., *3872,* March 27, 1965; decayed bork, Woodson Bridge State Park, Tehama Co., *9656,* April 29, 1967. In each of the above collections the substrate upon which *L. castanea* was growing was originally collected because it had another, larger myxomycetous species upon it. The minute sporangia of *L. castanea* were discovered later in the laboratory while the substrate was being scanned with a stereoscopic microscope. There

are numerous sessile species of *Licea* that have the peridium divided into distinct lobes. *Licea castanea* can be distinguished from these by the chestnut to light brown color of the peridium and the nearly smooth spores. In the United States *L. castanea* has been reported as far west as Kansas and is considered rare. Because of its small size, the sporangia being about 0.25 mm in diameter, it is easily overlooked.

Licea pedicellata (H. C. Gilbert) H. C. Gilbert. Bark of living *Quercus lobata* Neé in Lower Bidwell Park, Chico, Butte Co., *9887, 9890, 9892, 9894,* Feb. 21, 1969; *11013,* Jan. 28, 1970; *10266* and *10275,* Jan. 30, 1970. All of these collections represent naturally developed fructifications. This is unusual for this species as it is mainly known from damp chambers. *Licea pedicellata, L. operculata* (Wingate) Martin, and *L. erecta* Thind and Dhillon are the only species of the genus that have stalked sporangia. *Licea pedicellata* can be distinguished from *L. operculata* by the absence of a distinct sporangial lid. It differs from *L. erecta* by the presence of platelets in the peridium, sporangia 0.1–0.3 mm in diameter and spores 11–13 μ in diameter, while *L. erecta* lacks peridial platelets, has sporangia 0.3–0.4 mm in diameter and spores 14–15 μ in diameter. With the exception of spores 9–10 μ in diameter instead of the reported 12–13 μ, the description listed above fits the published descriptions perfectly. Since Martin and Alexopoulos (1969) state that on rare occasions the spores can be as small as 10 μ, I do not believe that this difference is of taxonomic significance. Prior to this report, *L. pedicellata* was collected only as far west as Texas. However, with diligent damp chamber work, this minute species should be found throughout the United States.

Cribrariaceae

Cribraria dictyospora Martin and Lovejoy. Decayed wood, *6718,* Mt. Shasta, Siskiyou Co., 7,200 ft. elev., July 5, 1967, and *7538,* King's Creek, Lassen Volcanic National Park, 7,200 ft. elev., July 27, 1968. This taxon can be distinguished from other members of the genus by the relatively large, hazel sporangia that are up to 0.8 mm in diameter, with distinct basal cups containing dark radiating lines, as well as the large reticulate spores that are 8–9 μ in diameter. The spore reticulations in these two specimens are very distinct and most of the spores are 9 μ in diameter. Most species of *Cribraria* have spores about 6 μ in diameter. *Cribraria dictyospora* is an extremely rare species, previously reported only from Oregon.

Trichiaceae

Trichia verrucosa Berk. Decaying log, Big Lagoon School, Humboldt Co., *12111,* Jan. 30, 1972. This species is easy to identify, being the only member of the genus with distinctly stalked sporangia and coarsely reticulate spores. Additional characteristics helpful in recognizing it are the presence of capillitial threads with short tapering apices and the tendency for fusion of the stalks so that the sporangia form in small

clusters. This species has been reported from many areas of the world, but nowhere does it appear to be common. In the United States it has been reported only from Washington and Oregon.

Stemonitaceae

Barbeyella minutissima Meylan. On a leafy liverwort, *10427,* MacKerricher Beach State Park, Mendocino Co., March 23, 1970: decayed wood, *11884,* Serene Lake, Placer Co., 6,700 ft. elev., June 28, 1971, *11885,* Luther Pass, El Dorado Co., 7,700 ft. elev., June 19, 1971; bryophytes on dead wood, *12120* and *12121,* Big Lagoon School, Humboldt Co., Jan. 30, 1972. *Barbeyella* is monotypic and is easily identified by its minutely stalked sporangia less than 0.2 mm in diameter. The few capillitial threads are attached at their apices to the large petaloid lobes of the peridium. Because of the small sporangia, these collections were discovered accidentally in the laboratory by scanning the substrate with a stereoscopic microscope. This species is known only from a few locations in the world. I have, however, found it many times in Washington and predict that it can be found with regularity if lignicolous bryophytes are scanned carefully in the laboratory.

Macbrideola decapillata H. C. Gilbert. Bark of living *Quercus lobata* Neé, Lower Bidwell Park, Chico, Butte Co., *9665,* Feb. 5, 1967, *9724,* Nov. 23, 1966, *9873,* Dec. 22, 1966, *9875,* Feb. 3, 1967, *10274,* Jan. 30, 1970. Because of the small sporangia that are less than 100 μ in diameter, it is difficult to observe *M. decapillata* in the field. My collections were obtained by collecting bark that had *Physarum crateriforme* Petch growing on it and searching for *M. decapillata* in the laboratory with a stereoscopic microscope. I have made many collections of this species, but list five here for the sake of brevity. This species differs from other members of the genus by its fugacious peridium, tapering capillitial threads and uniformly warted spores that exceed 8.0 μ in diameter. *M. decapillata* is known only from scattered localities in the United States, but it is probably often overlooked because of its small size.

Lamproderma arcyrionema Rost. On fallen conifer twigs, Panther Meadows Campground, Siskiyou Co., 7,600 ft. elev., *3682,* June 25, 1966. There are several characteristics that distinguish this species from the closely related *L. biasperosporum* Kowalski. In *L. arcyrionema* the capillitium forms a rigid intricate net with many circinate-flexuous threads and is dark brown throughout. Thus, it appears reddish brown when the peridium is removed and the spores have been blown out. In *L. biasperosporum* the capillitium forms a very weak, lax net with little branching and anastomosing. The threads are straight, not circinate-flexuous, and the extremities are colorless. Thus, it appears whitish when the peridium is removed and the spores have been blown out. The sporangia of *L. arcyrionema* are 0.5 mm or more in diameter and clustered while those of *L. biasperosporum* are 0.5 mm or less in diameter and widely scattered. *L. arcyrionema* is probably the most common species in the genus, but it appears to be rare in California.

Physaraceae

Badhamia obovata (Peck) S. J. Smith. Pygmy Forest near Van Damme State Park, Mendocino Co., March 22, 1970, *10285* on a decaying leaf and *10286* on decaying bark. *Badhamia obovata* is readily separated from the other species in the genus by its stipitate habit, distinctive cylindrical columella, and spores that are often strikingly reticulate. Although it is the most common member of the genus, it appears to be rare in California.

Didymiaceae

Mucilago crustacea Wiggers. On the stem of living *Rhus diversiloba* T. & G., *11886,* Lower Bidwell Park, Chico, Butte Co., Dec. 12, 1970. This taxon is extremely easy to identify as it is the only known slime mold that is aethaloid and has crystalline lime in the peridium. Although *M. crustacea* appears to be rare in California, it is cosmopolitan and in most regions of its range it seems to be very common.

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A DISTINCTIVE NEW CALOCHORTUS (LILIACEAE) FROM MARIN COUNTY, CALIFORNIA

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While it is not unusual for a new species of plants to be described from a state as well collected as California, it is remarkable that a plant as distinctive as the species of *Calochortus* described herein has escaped discovery for so long, since it is from an area that has been given considerable attention (Howell 1970, Peñalosa 1963). In overall appearance it is easily recognized and in detail it shows a combination of characteristics unique in the genus. It is in fact so distinctive that its existence challenges the currently accepted infrageneric classification.

Calochortus tiburonensis A. J. Hill, sp. nov.

Bulbi tunica, saltem apud bulbos maiores, fibroso-reticulata; folium basale unicum, planum, usque ad post anthesin tempum viride: flores late campanulati, erecti; petala pallida flavo-viridia, fimbriata, maculis